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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,479	10/01/2003	Wan Hyuk Yoon	1508.1021	4675

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EXAMINER

DESAI, ANISH P

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,479	YOON, WAN HYUK	
	Examiner	Art Unit	
	Anish Desai	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-16,27-32 is/are pending in the application.
- 4a) Of the above claim(s) 28-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-16 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments in response to the Office Action 09/28/05 have been fully considered.
2. 35 USC Section 112 rejections have been withdrawn.
3. All of the art rejections are maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5-9, 12-16, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kristen (US Patent 4,756, 422) in view of Shepherd (US Patent 5,129, 813) substantially as set forth in 09/28/05 Office action.

Kristen teaches a plastic bag for vacuum packaging (see Title). The sides of the vacuum bag 10 of Kristen are made of at least two layers. An inner layer 16 formed from a heat sealable thermoplastic material. An outer layer 18 is formed from a gas-impermeable material to provide a barrier against the influx of air to the interior of the bag 10 after it has been sealed. The inner layer 16 includes a pattern of intersecting channels 20 formed on at least one of its facing inner surfaces (Column 1, lines 44-53). Thus, a pattern of intersecting channels can be formed on the outer surface of the inner layer 16.

The inner layer 16 of Kristen is embossed with rectangular patterns 24 (Column 3, lines 15-19). The examiner is equating the rectangular patterns of Kristen as the claimed protuberances, the inner layer as the claimed thermoforming layer, and the outer layer as the claimed base layer. Moreover, Kristen teaches that the inner layer and the outer layer can be joined together over their entire adjacent surfaces such that no air pockets exists between the inner layer and the outer layer (Column 2, lines 66-68). With respect to claim 12, although Kristen does not explicitly teach adhesive layer, it is obvious that a skilled artisan can use adhesive to bond two layers together motivated by the desire to remove any air pockets that can be created between the two layers.

With respect to claims 13-15, Kristen teaches that the outer layer of the vacuum bag can be made of polyester or polyamide (Column 3, line 47-49) which meets the claim limitations of claim 13, a bag can include intermediate layers between inner layer and outer layer (Column 4, lines 47-49) which meets the claim limitation of claim 14 where the intermediate layers and an outer layer can be collectively called as the claimed base layer with a multilayered structure, and the inner layer is made of polyethylene (Column 4, lines 43-44) which meets the claim limitations of claim 15. Additionally, in Figure 2 of Kristen's disclosure, it seems that the inner layer is not embossed in the areas where the air channels are formed which meets the claim limitation of claim 16.

Kristen is silent as to teaching of a first group and a second group of protuberances having height higher than that of the first group of protuberances, a third

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group of protuberances having a height higher than that of the second group of protuberances, a fourth group of protuberances having a height higher than that of the third group of protuberances, the first, second, third, and fourth group of protuberances have different arrangements arranged at various angles to form a pattern on the first surface of the thermoforming layer, the first, second, third, and the fourth group of protuberances have various sizes and irregular shapes as claimed in claim 1. Further Kristen is silent as to teaching of the pattern comprising fruit shape, animal shape, character shape, plant shape, and diagram shape as claimed in claims 5-9 respectively. However, Shepherd teaches a vacuum bag including a non-porous material having impressed therein a three dimensional patterns defining plurality of interconnected channels (see Abstract). Figures 1 and 2 of the Shepherd show such a three-dimensional pattern. The vacuum bag of Shepherd allows the air within the bag to be quickly and easily evacuated without the formation of air pockets and wrinkles (Column 2, lines 31-32). Further with respect to claim 1, Figure 2 of Shepherd shows protuberances of different heights. Moreover, with respect to claim 1, Figure 1 and Figure 2 of Shepherd show protuberances of various sizes and Figure 1 of Shepherd shows protuberances of various shapes. Additionally, regarding claim 1, Figure 2 of Shepherd shows protuberances at different angles. Note that with respect to the recitation "first group", "second group", "third group" and "fourth group", a skilled artisan can designate a group of protuberances with certain height, size and shape as "first group", "second group" etc. With respect to claims 5-9, Shepherd discloses a patterned vacuum bag except for the claimed patterns. However, Shepherd teaches that any

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pattern that defines plurality of interconnected channels can be employed (Column 6, lines 1-5). Thus, in absence of unexpected results, a skilled artisan can choose any suitable pattern as claimed in claims 5-9. With respect to claim 27, recall that Kristen teaches vacuum packaging bag. As shown in Figure 1, it seems that the bag of Kristen has an upper sheet and a lower sheet, the lower edges and both side edges are sealed such that there is an opening in the bag to receive the contents. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to first group and second group of protuberances having height higher than that of the first group of protuberances, a third group of protuberances having a height higher than that of the second group of protuberances, a fourth group of protuberances having a height higher than that of the third group of protuberances, the first, second, third, and fourth group of protuberances have different arrangements arranged at various angles to form a pattern on the first surface of the thermoforming layer, the first, second, third, and fourth group of protuberances have various sizes and irregular shapes as claimed in claim 1, and the pattern comprising fruit shape, animal shape, character shape, plant shape, and diagram shape as claimed in claims 5-9 respectively, motivated by the desire to form a vacuum packaging bag which allows air within the bag to be removed quickly and without the formation of wrinkles as taught by Shepherd.

5. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kristen (US Patent 4,756, 422) in view of Shepherd (US Patent 5,129, 813) as applied to the claim 1 above, and further in view of Leonard Jr. (US Patent 4,343,848).

The inventions of Kristen and Shepherd are previously disclosed. Kristen is silent as to teaching of first group of protuberances are each 0.8 to 1.5 times as thick as the thickness of the thermoforming layer and second group of protuberances are each 1.0 to 2.0 times as thick as a thickness of the thermoforming layer. However, Leonard teaches an embossed thermoplastic film that can be used in a packaging field (Column 1, lines 13-16). According to Leonard, an advantage of the film of the present invention is that the film has an increased embossed thickness over the prior art films. The increased embossed thickness greatly improves handling of the film on processing machinery, and in particular, rolling up the film on large storage rolls (Column 2, lines 3-8). The protuberances of Leonard have base width b of from about 4 mils to about 10 mils (Column 2, lines 54-56). The examiner is equating the base width as the thickness of the protuberances. The thickness of the thermoplastic film is from 0.5 mil to about 10 mils (Column 2, lines 57-60). Thus a ratio of the protuberances with a base width of 5 mil to the thermoplastic film with a thickness of 5 mil will result in the claimed limitation of claims 10 and 11. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the protuberances with given base width and thermoplastic film with given thickness of Leonard in the invention of Kristen, motivated by the desire to easily roll up the film on storage rolls as taught by Leonard.

Response to Arguments

6. Applicant's arguments filed 12/28/05 have been fully considered but they are not persuasive.

7. The 35 USC Section 112 rejections have been withdrawn in view of the present amendments and response (See page 6 of the 12/28/05 amendment).

8. The art rejections are maintained because of the following reasons.

Applicant argues that Kristen only provides a regular waffle like pattern (disclosed as a rectangular pattern in Kristen's invention) that is formed by plurality of raised protuberances having uniform thickness that are formed on the inner surface of the vacuum packaging film which can not be used to realize various patterns. The examiner respectfully disagrees. The examiner recognizes that Kristen teaches only one type of pattern that is formed by the plurality of protuberance having uniform thickness. However, the examiner is not relying on Kristen to show the various patterns as claimed in the present invention, but rather on the disclosure of Shepard as disclosed above and in the 09/25/05 Office action.

The applicant argues that in Kristen, in the case where the regular protuberances are formed on the inner surface of the vacuum film, vacuum performance determined by heights, shapes, arrangements, structures, and total floor of the protuberance is definite, and thus a phenomenon in which the upper sheet and lower sheet adhere to each other (referred to as 'early collapse') may occur. The examiner respectfully disagrees. The examiner wishes to point out that in contrary to the applicant's argument, Kristen actually teaches that the total collapse of the bag is prevented by the

channels 20 and thus all the air can be removed from the interior of the bag, which creates the desired vacuum (Column 2, lines 56-58).

Applicant argues that the three-dimensional pattern of Shepherd relaxes into a locally flat two-dimensional configuration upon the evacuation of the vacuum bag and the two-dimensional configuration is formed on the inner surface of the vacuum film after the completion of the vacuum process, undesirably resulting in indefinite shapes of patterns and impossibility of forming various patterns. The examiner respectfully disagrees. The examiner recognizes that the three-dimensional pattern of Shepard relaxes into a locally flat two-dimensional configuration upon the evacuation of the vacuum bag. However, Shepard further teaches that the removal of the inventive vacuum bag from an un-cured lay-up is easily accomplished, if necessary, because the pattern will be retained in the bag (Column 7, lines 65-68). Thus, it is possible to maintain the pattern in the vacuum bag of Shepherd. Further there is nothing in the claim that would teach or suggest that the claimed pattern does not collapse upon the evacuation of air from the vacuum bag upon the evacuation of air.

The applicant argues that in Shepherd, the vacuum performance is determined by the heights, shapes, arrangements, structures and total floor of the protuberances is decreased as the vacuum process is conducted. Further the applicant argues that in Shepherd, a vacuum application port is sealed using a vacuum apparatus, which is different from the subject application where the open part between the upper sheet and the lower sheet of the vacuum packaging film is sealed. The argument is not found persuasive in determination of patentability, because there is no need for Shepherd to

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address these issues such as “the open part between the upper sheet and the lower sheet is sealed” as such issues were already taught by Kristen. While it is true that the heights, shapes, arrangements, structures and the total floor of the protuberances are decreased as the vacuum process is conducted, such does not render the combined teachings of Kristen and Shepherd unobvious or less obvious because the combination of references suggested in the Office action enjoys a reasonable expectation of success. One skilled in the art would have been motivated to apply the three dimensional pattern as taught by the Shepherd on the thermoforming layer of Kristen for allowing the air within the bag to be quickly and easily evacuated while not allowing the formation of air pockets and wrinkles.

**HAI VO
PRIMARY EXAMINER**

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

APD

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**HAIVO
PRIMARY EXAMINER**